

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-24 (canceled)

Claim 25 (currently amended): An electrochemical ~~[[The]]~~ device ~~of Claim 22,~~
comprising:

at least one carrier substrate; and

a stack of functional layers comprising at least one electrically conducting layer comprising metal oxide(s), and a multicomponent electrode including at least one electrochemically active layer, at least one higher-conductivity material and at least one network of one of conducting wires and conducting strips, said higher-conductivity material having a surface resistance which is lower than a surface resistance of said electrically conducting layer,

wherein said higher-conductivity material is incorporated in said electrically conducting layer.

Claim 26 (previously presented): The device of Claim 25, wherein said higher-conductivity material is incorporated in said electrically conducting layer, in the form of fibers or particles.

Claim 27 (currently amended): The device of Claim ~~[[22]]~~ 25, wherein said at least one electrically conducting layer comprises at least one doped metal oxide selected from the group consisting of doped tin oxide, doped zinc oxide and doped indium oxide.

Claim 28 (previously presented): The device of Claim 27, wherein the doped tin oxide is fluorine doped or antimony doped.

Claim 29 (previously presented): The device of Claim 27, wherein the doped zinc oxide is aluminum doped, tin doped or fluorine doped.

Claim 30 (previously presented): The device of Claim 27, wherein the doped indium oxide is tin doped.

Claim 31 (currently amended): The device of Claim ~~[[22]]~~ 25, wherein said higher-conductivity material is essentially metallic.

Claim 32 (previously presented): The device of Claim 31, wherein said higher-conductivity material comprises a metal selected from the group consisting of Ag, Au, Cu, Al, and alloys of thereof.

Claim 33 (currently amended): The device of Claim ~~[[22]]~~ 25, wherein said multicomponent electrode is essentially transparent in the visible region.

Claim 34 (currently amended): An electrochemical ~~[[The]]~~ device ~~of Claim 22,~~
comprising:

at least one carrier substrate; and

a stack of functional layers comprising at least one electrically conducting layer comprising metal oxide(s), and a multicomponent electrode including at least one electrochemically active layer, at least one higher-conductivity material and at least one network of one of conducting wires and conducting strips, said higher-conductivity material having a surface resistance which is lower than a surface resistance of said electrically conducting layer,

wherein said network comprises a plurality of conducting strips obtained by screen printing using a paste-like suspension of a silver-type metal and a low-melting-point frit in an organic binder.

Claim 35 (previously presented): The device of Claim 34, wherein said plurality of conducting strips are essentially parallel each to the other.

Claim 36 (currently amended): An electrochemical ~~[[The]]~~ device ~~of Claim 22~~
having at least one carrier substrate, and a stack of functional layers comprising at least one

electrically conducting layer comprising metal oxide(s), and a multicomponent electrode including at least one electrochemically active layer, at least one higher-conductivity material and at least one network of one of conducting wires and conducting strips, said higher-conductivity material having a surface resistance which is lower than a surface resistance of said electrically conducting layer, the device obtained by a process comprising:

screen-printing said network onto a glass-type carrier substrate to obtain a screen-printed network;

covering said screen-printed network with said at least one electrically conducting layer in order to form said multicomponent electrode; or

laying down said network on said electrically conducting layer covering said carrier substrate.

Claim 37 (currently amended): An electrochemical ~~[[The]] device of Claim 22~~ comprising:

at least one carrier substrate; and

a stack of functional layers comprising at least one electrically conducting layer comprising metal oxide(s), and a multicomponent electrode including at least one electrochemically active layer, at least one higher-conductivity material and at least one network of one of conducting wires and conducting strips, said higher-conductivity material having a surface resistance which is lower than a surface resistance of said electrically conducting layer,

wherein said network comprises a plurality of conducting wires in the form of essentially metallic wires surface-laid on a sheet comprising a thermoplastic polymer.

Claim 38 (currently amended): The device of Claim ~~[[22]]~~ 25, wherein said network comprises a fabric, a net or a metallic nonwoven material.

Claim 39 (previously presented): The device of Claim 38, wherein said network comprises metallic wires having a diameter of from 10 to 100 μm .

Claim 40 (currently amended): An electrochemical ~~[[The]]~~ device of ~~Claim 38~~ comprising:

at least one carrier substrate; and

a stack of functional layers comprising at least one electrically conducting layer comprising metal oxide(s), and a multicomponent electrode including at least one electrochemically active layer, at least one higher-conductivity material and at least one network of one of conducting wires and conducting strips, said higher-conductivity material having a surface resistance which is lower than a surface resistance of said electrically conducting layer,

wherein said network comprises a fabric, a net or a metallic nonwoven material and is a network surface-laid on a sheet comprising a thermoplastic polymer.

Claim 41 (currently amended): An electrochemical ~~[[The]]~~ device of ~~Claim 22~~ comprising:

at least one carrier substrate; and

a stack of functional layers comprising at least one electrically conducting layer comprising metal oxide(s), and a multicomponent electrode including at least one electrochemically active layer, at least one higher-conductivity material and at least one network of one of conducting wires and conducting strips, said higher-conductivity material having a surface resistance which is lower than a surface resistance of said electrically conducting layer,

wherein said network is obtained by etching or perforating a metallic layer or a metallic sheet.

Claim 42 (currently amended): An electrochemical ~~[[The]] device of Claim 22,~~
comprising:

at least one carrier substrate; and

a stack of functional layers comprising at least one electrically conducting layer comprising metal oxide(s), and a multicomponent electrode including at least one electrochemically active layer, at least one higher-conductivity material and at least one network of one of conducting wires and conducting strips, said higher-conductivity material having a surface resistance which is lower than a surface resistance of said electrically conducting layer,

wherein said multicomponent electrode comprises said at least one electrically conducting layer and at least one layer comprising said higher-conductivity material in electrical contact;

wherein at least one of said at least one electrically conducting layer and said at least one layer comprising said higher-conductivity material are optionally in contact with at least one layer comprising a dielectric material.

Claim 43 (currently amended): An electrochemical ~~[[The]] device of Claim 22,~~
comprising:

at least one carrier substrate; and

a stack of functional layers comprising at least one electrically conducting layer comprising metal oxide(s), and a multicomponent electrode including at least one electrochemically active layer, at least one higher-conductivity material and at least one network of one of conducting wires and conducting strips, said higher-conductivity material having a surface resistance which is lower than a surface resistance of said electrically conducting layer,

wherein said at least one layer comprising a dielectric material has an optical function, a function of anchoring said at least one layer comprising said higher-conductivity material to said carrier substrate or a function as a barrier to a migration of alkaline species coming from said carrier substrate which is glass.

Claim 44 (previously presented): The device of Claim 43, wherein said at least one layer comprising a dielectric material comprises a member selected from the group consisting of metal oxide, silicon oxide, metal oxycarbide, silicon oxycarbide, metal oxynitride, silicon oxycarbide and silicon nitride.

Claim 45 (currently amended): An electrochemical ~~[[The]] device of Claim 22,~~
comprising:

at least one carrier substrate; and

a stack of functional layers comprising at least one electrically conducting layer comprising metal oxide(s), and a multicomponent electrode including at least one electrochemically active layer, at least one higher-conductivity material and at least one network of one of conducting wires and conducting strips, said higher-conductivity material having a surface resistance which is lower than a surface resistance of said electrically conducting layer,

wherein said multicomponent electrode comprises a sequence ITO/Ag/ITO or Ag/ITO with optional interposition of at least one thin layer of partially oxidized metal at an Ag/ITO interface.

Claim 46 (currently amended): The device of Claim ~~[[22]]~~ 25, wherein said multicomponent electrode is provided with current leads.

Claim 47 (previously presented): The device of Claim 46, wherein said current leads are in the form of metal braids or shims.

Claim 48 (currently amended): ~~An~~ ~~The device of Claim 22, which is an~~
electrochromic system, with at least one carrier substrate and a stack of functional layers
comprising at least one electrically conducting layer comprising metal oxide(s), and a
multicomponent electrode including at least one electrochemically active layer, at least one
higher-conductivity material and at least one network of one of conducting wires and
conducting strips, said higher-conductivity material having a surface resistance which is
lower than a surface resistance of said electrically conducting layer, comprising at least, in
succession,

a first electrically conducting layer,

an electrochemically active layer liable to reversible insertion of ions of anodic-
coloring or, respectively, cathodic-coloring electrochromic material type,

a layer of electrolyte,

a second electrochemically active layer liable to reversible insertion of ions of anodic-
coloring or, respectively, anodic-coloring electrochromic material type, and

a second electrically conducting layer,

wherein at least one of said first and said second electrically conducting layer
comprises said electrically conducting layer comprising metal oxide(s); and

wherein at least one of said first and said second electrically conducting layer is part
of said multicomponent electrode.

Claim 49 (previously presented): The device of Claim 48, wherein said
electrochromic system is an all-solid or all-polymer electrochromic system.

Claim 50 (previously presented): The device of Claim 48, wherein said ions are H^+ ,
 Li^+ or OH^- .

Claim 51 (currently amended): ~~A~~ ~~The device of Claim 22, which is a viologenic~~
system comprising at least one carrier substrate and a stack of functional layers comprising at

least one electrically conducting layer comprising metal oxide(s), and a multicomponent electrode including at least one electrochemically active layer, at least one higher-conductivity material and at least one network of one of conducting wires and conducting strips, said higher-conductivity material having a surface resistance which is lower than a surface resistance of said electrically conducting layer, comprising at least, in succession,

a first electrically conducting layer,

a film having viologenic properties in the form of a polymer, of a gel or of a suspension in a liquid medium, and

a second electrically conducting layer;

wherein at least one of said first and said second electrically conducting layer comprises said electrically conducting layer comprising metal oxide(s); and

wherein at least one of said first and said second electrically conducting layer is part of said multicomponent electrode.

Claim 52 (currently amended): An electrochemical ~~[[The]] device of Claim 22,~~
comprising:

at least one carrier substrate; and

a stack of functional layers comprising at least one electrically conducting layer comprising metal oxide(s), and a multicomponent electrode including at least one electrochemically active layer, at least one higher-conductivity material and at least one network of one of conducting wires and conducting strips, said higher-conductivity material having a surface resistance which is lower than a surface resistance of said electrically conducting layer,

wherein the stack of functional layers is arranged between two substrates, each of which may be rigid, of glass type or rigid polymer or semi-rigid or flexible of PET type.

Claim 53 (previously presented): The device of Claim 52, wherein said polymer is a polycarbonate or PMMA.

Claim 54 (previously presented): The device of Claim 52, wherein the layers are transparent or absorbent.

Claim 55 (currently amended): A glazing, comprising:

the device of Claim [[22]] 25;

wherein said device uses as carrier substrate a) at least one rigid constituent substrate of a glazing or b) at least one flexible substrate combined by lamination with one rigid constituent substrate of said glazing or c) a combination of a) and b).

Claim 56 (currently amended): A method of making a glazing, comprising:

laminating the device of Claim [[22]] 25 with at least one rigid constituent substrate.

Claim 57 (currently amended): An [[A]] electrochemical energy storage device, comprising[[: the]] an electrochemical device of Claim 22 including at least one carrier substrate and a stack of functional layers comprising at least one electrically conducting layer comprising metal oxide(s), and a multicomponent electrode including at least one electrochemically active layer, at least one higher-conductivity material and at least one network of one of conducting wires and conducting strips, said higher-conductivity material having a surface resistance which is lower than a surface resistance of said electrically conducting layer.

Claim 58 (previously presented): The electrochemical energy storage device of Claim 57 which is a battery or a fuel cell.

Claim 59 (new): The device of Claim 25, which is an electrically controllable system having variable optical properties or variable energy properties or both.